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IS 11667 (1991): Technical drawing - Linear and angular tolerancing - Indication on drawings [PGD 24: Drawings]



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Indian Standard

**TECHNICAL DRAWINGS — LINEAR AND
ANGULAR TOLERANCING — INDICATION
ON DRAWINGS**

(First Revision)

UDC 744 : 621.753.1

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

October 1991

Price Group 3

Indian Standard

TECHNICAL DRAWINGS — LINEAR AND ANGULAR TOLERANCING — INDICATION ON DRAWINGS

(First Revision)

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 406 : 1987 'Technical drawings — Tolerancing of linear and angular dimensions', issued by the International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on the recommendations of the Drawing Sectional Committee (LMD 02) and approval of the Light Mechanical Engineering Division Council.

The original version of IS 11667 : 1985 'Technical drawings — Linear and angular tolerancing — Indication on drawings' was based on ISO 406 : 1982 'Technical drawings — Linear and tolerancing — Indication on drawings' issued by the International Organization for Standardization (ISO). Consequent to the revision of the International Standard, harmonization of the Indian Standard has been made by the adoption of ISO 406 : 1987.

In the adopted standard certain terminology and conventions are not identical with those used in Indian Standards; attention is especially drawn to the following:

- a) Comma (,) has been used as a decimal marker while in Indian Standards the current practice is to use stop (.) as the decimal marker.
- b) Wherever the words International Standard appear referring to this standard, they should be read as Indian Standard.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below alongwith their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 129 : 1985	IS 11669 : 1986 General principles of dimensioning on technical drawings	Identical
ISO 3098 - 1 : 1974	IS 9609 (Part 1) : 1983 Lettering on technical drawings : Part 1 English characters	Identical

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0 Introduction

For the purposes of this International Standard, all dimensions and tolerances on the drawings have been stencilled in upright lettering. It should be understood that these indications could just as well be written in free-hand or inclined (italic) lettering without altering the meaning of the indications.

For the presentation of lettering (proportions and dimensions), see ISO 3098-1.

1 Scope and field of application

This International Standard specifies the indication of tolerances for linear and angular dimensions on technical drawings. Indicating such tolerances does not necessarily imply the use of any particular method of production, measurement or gauging.

2 References

ISO 129, *Technical drawings — Dimensioning — General principles, definitions, methods of execution and special indications*.

ISO 3098-1, *Technical drawings — Lettering — Part 1: Currently used characters*.

3 Units

Deviations shall be expressed in the same unit as the basic size.

If two deviations relating to the same dimension have to be shown, both shall be expressed to the same number of decimal places (see figure 2), except if one of the deviations is zero (see figure 5).

4 Indication of the components of a linear dimension

4.1 ISO symbols

The components of the toleranced dimension shall be indicated in the following order: -

- a) the basic size;
- b) the tolerance symbol.

If, in addition to the symbols (see figure 1), it is necessary to express the values of the deviations (see figure 2) or the limits of size (see figure 3), the additional information shall be shown in parentheses.

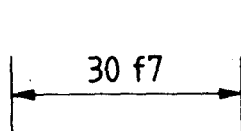


Figure 1

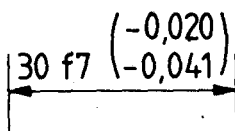


Figure 2

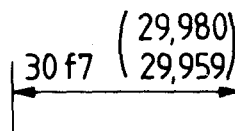


Figure 3

4.2 Permissible deviations

The components of the tolerated dimension shall be indicated in the following order (see figures 4 to 6):

- the basic size;
- the values of the deviations.

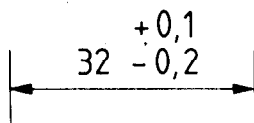


Figure 4

If one of the two deviations is zero, this should be expressed by the digit zero (see figure 5).

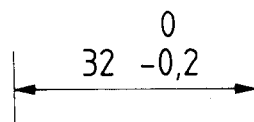


Figure 5

If the tolerance is symmetrical in relation to the basic size, the value of the deviations should be indicated once only, preceded by the sign \pm (see figure 6).

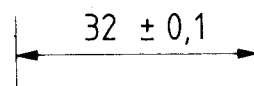


Figure 6

4.3 Limits of size

The limits of size may be indicated by an upper and lower dimension (see figure 7).

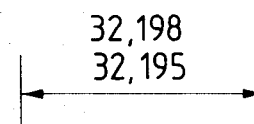


Figure 7

4.4 Limits of size in one direction

If a dimension needs to be limited in one direction only, this should be indicated by adding "min." or "max." to the dimension (see figure 8).

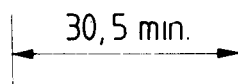


Figure 8

5 Order of indication of deviations and limits of size

The upper deviation or the upper limit of size shall be written in the upper position and the lower deviation or the lower limit of size in the lower position, irrespective of whether a hole or a shaft is tolerated.

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Doc : No. LMD 02 (0078)

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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